

FIFTY-THREE SPECIES OF TETRIGOIDEA (ORTHOPTERA) FROM CENWANG MOUNTAIN IN THE WESTERN GUANGXI ZHUANG AUTONOMOUS REGION, CHINA¹

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ABSTRACT: In this paper, we provide a checklist of 53 species of Tetrigoidea ground grasshoppers (Cladonotidae, Scelimenidae, Metrodoridae and Tetrigidae) from Cenwang Mountain, the natural reserve located near Tianlin County in the west Guangxi Zhuang Autonomous Region of southwestern China. In addition, the female *Macromotettix serrifemoralis* Zheng et Jiang and the male *Tetrix ruyuanensis* Liang are described for the first time.

KEY WORDS: Tetrigoidea, Cenwang Mountain, Western Guangxi Zhuang Autonomous Region, China, *Macromotettix serrifemoralis* female, *Tetrix ruyuanensis* male

Cenwang Mountain is a forested resort area (2,060 meters elevation) near Tianlin County, approximately 40 kilometers north of the city of Baise in the west Guangxi Zhuang Autonomous Region of southwestern China. The climate is subtropical, frosts are rare, and rainfall averages around 1,300 mm annually. Average temperatures range from 20.6°C in July to 4.7°C in January (Forestry Department of Guangxi, 1993). The vegetation zone is subtropical mountain broadleaf evergreens (Forestry Department of Guangxi, 1993). Vertical changes in the climate are clear because the mountain is large and steep. The overstory vegetation in the upper region (over 1,800 meters) of the mountain, where the collections were made, consists largely of secondary growth trees, *Quercus nubbium*, *Fagus lucida* (both in the Fagaceae) and *Liquidambar acalycina* (Hamamelidaceae). The vegetation in the lower side of the mountain is very complex, being composed of subtropical middle mountain mixed broadleaf evergreen and deciduous forest (Forestry Department of Guangxi, 1993).

The 53 species of Tetrigoidea reported herein were collected from grassy vegetation near roadsides using a sweep net between 27 May – 5 June 2002 and 14–16 August 2002. The locations visited included the Linao Hill, Weihuo Hill, Cenwang Hill, Yaojiawan Hill, Dadong Hill, Langping, Jiudongping and Laoshan Tree Farm.

The specimens were deposited at the College of Life Sciences, Nanjing Normal University (Nanjing), and at the Institute of Entomology, Zhongshan University (Guangzhou).

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List of species of Tetrigoidea from the Cenwang Mountain, Western Guangxi Zhuang Autonomous Region, China

Taxa are listed alphabetically within each family. For each species listed, except *Tetrix ruyuanensis* Liang and *Macromotettix serrifemoralis* Zheng et Jiang, the data is organized as follows: scientific name, author and year, number of males and females, dates, as well as collection localities. The asterisk "*" represents records that have been reported elsewhere in China.

Cladonotidae

Deltonotus guangxiensis Liang et Jiang, 2004. 1♂, 2♀ 14-16 August 2002, Linao Hill (1,400 meter elevation); 3♂, 1♀ Weihuo Hill (1,600m); 1♂, 2♀ Cenwang Hill (1,600-1800m)

Pseudopitettix linaoshanensis Liang et Jiang, 2004. 3♂, 7♀ 14-16 August 2002, Linao Hill (1,400m); 1♀ Weihuo Hill (1,600m); 1♀ Yaojiawan Hill (1,200-1,400m)

Scelimenidae

Criotettix bispinosus (Dalman, 1818). 5♂, 2♀ 27 May-5 June 2002, Dadong Hill (1,400m); 1♂, 3♀ Langping (1,200-1,300m)

Criotettix curvispinus Zheng, 1993. 3♀ 27 May-5 June 2002, Yaojiawan Hill (1,200-1,400m)

Eucriotettix oculatus (Bolivar, 1898). 4♂, 2♀ 27 May-5 June 2002, 14-16 August 2002, Linao Hill (1,400m); 3♂, 5♀ Linao Hill (1,200-1,400m); 2♂, 6♀ Dadong Hill (1,400m); 4♂, 1♀ Weihuo Hill (1,300m); 3♀ Langping (1,200-1,300m); 4♂ Jiudongping (1,200-1,300m)

Scelimenella melli Günther, 1937. 1♂, 3♀ 27 May-5 June 2002, Dadong Hill (1,400m)

Thoradonta lativertex Günther, 1938. 3♂, 4♀ 14-16 August 2002, Linao Hill (1,400m); 2♂, 8♀ Weihuo Hill (1,300m); 4♂, 1♀ Dadong Hill (1,400m); 2♂, 5♀ Langping (1,200m); 2♂ Jiudongping (1,200-1,300m)

Thoradonta transpicula Zheng, 1996. 2♂, 1♀ 27 May-5 June 2002, Dadong Hill (1,400m)

Thoradonta yunnana Zheng, 1981. 2♂ 27 May-5 June 2002, 14-16 August 2002, Weihuo Hill (1,300m); 1♂, 2♀ Linao Hill (1,400m)

Zhengitettix hainanensis Liang, 1994. 2♂, 4♀ 27 May-5 June 2002, 14-16 August 2002, Dadong Hill (1,400m); 1♂, 3♀ Linao Hill (1,400m); 5♂, 2♀ Weihuo Hill (1,300m); 2♂, 1♀ Jiudongping (1,200-1,300m)

* *Zhengitettix obliquispicula* Zheng et Jiang, 2♀ 27 May-5 June 2002, Linao Hill (1,200-1,400m); 1♂, 1♀ Dadong Hill (1,400m)

Metrodoridae

Bolivaritettix circinihumerus Zheng, 2003. 7♂, 2♀ 27 May-5 June 2002, Langping (1,200-1,300m)

Bolivaritettix circocephalus Zheng, 1992. 4♂ 14-16 August 2002, Jiudongping (1,200-1,300m); 2♂, 1♀ Weihuo Hill (1,300m)

Bolivaritettix fanjingshanensis Zheng, 1992. 3♂, 2♀ 14-16 August 2002, Jiudongping (1,200-1,300m)

Bolivaritettix ghumtianns (Hancock, 1915). 4♂, 5♀ 14-16 August 2002, Linao Hill (1,400m); 2♂, 1♀ Dadong Hill (1,400m); 3♀ Langping (1,200m)

Bolivaritettix guibeiensis Zheng et Jiang, 1994. 6♂, 1♀ 14-16 August 2002, 27 May-5 June 2002, Weihuo Hill (1,300m); 2♂, 3♀ Linao Hill, 1400m; 5♂, 2♀ Jiudongping (1,200-1,300m); 3♀, 7♀ Langping (1,200m)

Bolivaritettix humerilis Günther, 1939. 3♂, 1♀ 27 May-5 June 2002, 14-16 August 2002, Cenwang Hill (1,500-1,800m); 2♂, 5♀ Langping (1,200-1,300m); 4♂, 2♀ Linao Hill (1,400m); 1♀ Jiudongping (1,200-1,300m)

- Bolivaritettix javanicus* (Bolivar, 1909). 2♂ 14-16 August 2002, Weihuo Hill (1,600m)
- Bolivaritettix lativertex* (Brunner von Wattenwyl, 1893). 3♀ 14-16 August 2002, 27 May-5 June 2002, Jiudongping (1,300m); 2♂, 1♀ Weihuo Hill (1,600m); 3♂, 4♀ Dadong Hill (1,400m)
- Bolivaritettix longzhouensis* Zheng et Jiang, 1995. 2♂, 1♀ 14-16 August 2002, Weihuo Hill (1,600m); 1♂, 4♀ Cenwang Hill (1,400-1,800m)
- Bolivaritettix nigritibialis* Zheng, 2002. 2♂, 4♀ 27 May-5 June 2002, Langping (1,200-1,300m)
- Bolivaritettix sikkimensis* (Bolivar, 1909). 2♂, 6♀ 14-16 August 2002, Linao Hill (1,400m)
- * *Bolivaritettix tianlinensis* Zheng et Jiang, 2004. 1♂, 2♀ 27 May-5 June 2002, Linao Hill (1,400m)
- Bolivaritettix yuanbaoshanensis* Zheng et Jiang, 1995. 4♂, 3♀ 14-16 August 2002, 27 May-5 June 2002, Linao Hill (1,400m); 3♂, 1♀ Laoshan Tree Farm (1,200-1,600m); 2♂ Jiudongping (1,200-1,300m); 4♂, 1♀ Dadong Hill (1,400m); 2♂, 2♀ Cenwang Hill (1,400-1,800m); 1♂, 1♀ Weihuo Hill (1,300m)
- Macromotettix serrifemoralis* Zheng et Jiang, 2002. 3♂, 1♀ 14-16 August 2002, Linao Hill (1,400m); 5♀ Jiudongping (1,200-1,300m); 6♂, 2♀ Dadong Hill (1,400m); 2♂, 1♀ Weihuo Hill (1,600m); 4♂, 2♀ Cenwang Hill (1,400-1,800m); 3♂, 2♀ Yaojiawan Hill (1,200-1,400m); 4♂, 6♀ Laoshan Tree Farm (1,400-1,700m). Female described in next section.
- Macromotettix tianlinensis* Liang et Jiang, 2004. 10♀ 14-16 August 2002, Linao Hill (1,400m); 1♀ Jiudongping (1,200-1,300m); 1♀ Dadong Hill (1,400m)
- Macromotettix torulosinota* Zheng et Jiang, 1998. 2♂, 4♀ 27 May-5 June 2002, Linao Hill (1,400m); 3♂, 2♀ Dadong Hill (1,400m)
- Mazarredia huanjiangensis* Zheng et Jiang, 1994. 2♂, 2♀ 27 May-5 June 2002, Linao Hill (1,400m)
- Mazarredia longipennis* Zheng et Jiang, 2004. 3♂ 27 May-5 June 2002, Linao Hill (1,400m)
- Systolederus fujiangensis* Zheng, 1993. 2♂, 1♀ 27 May-5 June 2002, Linao Hill (1,400m)
- Systolederus guangxiensis* Zheng, 1998. 1♂, 1♀ 27 May-5 June 2002, 14-16 August 2002, Linao Hill (1,400m); 2♂, 4♀ Jiudongping (1,200-1,300m); 1♂, 3♀ Dadong Hill (1,400m)
- * *Systolederus longipennis* Zheng et Jiang, 2004. 2♂ 27 May-5 June 2002, Dadong Hill (1,400m)
- * *Systolederus tianlinensis* Jiang et Liu, 2004. 1♂, 1♀ 27 May-5 June 2002, Linao Hill (1,400m)
- Xistra longidorsalis* Liang et Jiang, 2004. 7♀ 14-16 August 2002, Linao Hill (1,400m); 1♂ Dadong Hill (1,400m)

Tetrigidae

- * *Bannutettix tianlinensis* Zheng et Jiang, 2004. 2♀ 27 May-5 June 2002, Linao Hill (1,200-1,400m)
- Ceperoi chinensis* Liang, 1998. 1♂, 4♀ 14-16 August 2002, Linao Hill (1,400m); 5♂, 2♀ Cenwang Hill (1,600-1,800m); 2♀ Dadong Hill (1,400m); 1♂ Weihuo Hill (1,300m); 1♂, 3♀ Jiudongping (1,200-1,300m)
- Coptotettix fossulatus* Bolivar, 1887. 3♂, 1♀ 27 May-5 June 2002, Weihuo Hill (1,300m)
- Coptotettix gongshunensis* Zheng, 1992. 3♂, 2♀ 27 May-5 June 2002, Langping (1,200-1,300m)
- Ergatettix brachypterus* Zheng, 1993. 4♂, 1♀ 27 May-5 June 2002, Cenwang Hill (1,500-1,800m)
- Euparatettix variabilis* (Bolivar, 1887). 6♂, 7♀ 14-16 August 2002, Linao Hill (1,400m)
- Formosatettix guangdongensis* Liang, 1991. 6♂, 8♀ 27 May-5 June 2002, Linao Hill (1,400m)
- Formosatettix yunnanensis* Zheng, 1992. 3♂, 6♀ 27 May-5 June 2002, Cenwang Hill (1,800m)
- Teredorus albimarginus* Zheng et Zhou, 1996. 2♂, 5♀ 27 May-5 June 2002, Dadong Hill (1,400m)
- Tetrix bolivari* Sauley, 1901. 3♀ 27 May-5 June 2002, Weihuo Hill (1,300m); 4♂, 1♀ Linao Hill (1,400m); 2♂, 1♀ Linao Hill (1,200-1,400m); 2♂ Dadong Hill (1,400m); 3♂, 2♀ Yaojiawan Hill (1,200-1,400m)

- * *Tetrix cenwangaoshana* Zheng et Jiang, 2004. 2♀ 27 May–5 June 2002, Cenwang Hill (1,500–1,800m)
- Tetrix guangxiensis* Zheng et Jiang, 1996. 3♂, 2♀ 27 May–5 June 2002, Weihuo Hill (1,300m); 3♂, 8♀ Linao Hill (1,400m); 7♂, 6♀ Linao Hill (1,200–1,400m); 5♂, 2♀ Dadong Hill (1,400m); 2♂, 6♀ Langping (1,200–1,300m)
- Tetrix japonica* (Bolivar, 1887). 18♂, 23♀ 27 May–5 June 2002, 14–16 August 2002, Cenwang Hill (1,500–1,800m); 12♂, 15♀ Weihuo Hill (1,300m); 6♂, 8♀ Linao Hill (1,400m); 9♂, 10♀ Linao Hill (1,200–1,400m); 14♂, 6♀ Dadong Hill (1,400m); 7♂, 8♀ Langping (1,200m); 16♂, 10♀ Jiudongping (1,200–1,300m)
- Tetrix ruyuanensis* Liang, 1998. 6♂, 4♀ 14–16 August 2002, Cenwang Hill (1,500–1,800m); 2♂, 1♀ Weihuo Hill (1,300–1,600m); 3♂, 2♀ Langping (1,200–1,300m); 9♂, 5♀ Dadong Hill (1,400m); 10♂ Yaojiawan Hill (1,200–1,400m); 2♂, 1♀ Laoshan Tree Farm (1,400–1,700m)
- Tetrix subulata* (Linnaeus, 1761), 3♂, 2♀ 27 May–5 June 2002, Linao Hill (1,200–1,400m); 1♂, 1♀ Dadong Hill (1,400m)
- Tetrix tenuicornis* (Sahlberg, 1893). 2♂, 4♀ 27 May–5 June 2002, Cenwang Hill (1,500–1,700m)
- Tetrix tiukihami* Zheng et Liang, 1998. 3♂, 1♀ 27 May–5 June 2002, Dadong Hill (1,400m)
- Tetrix tubercarina* Zheng et Jiang, 1994. 3♂, 1♀ 27 May–5 June 2002, Langping (1,200–1,300m)
- Tetrix yunnanensis* Zheng, 1992. 3♂, 5♀ 27 May–5 June 2002, Langping (1,200–1,300m)

Descriptions of female *Macromotetrix serrifemoralis* Zheng et Jiang and male *Tetrix ruyuanensis* Liang

The female *Macromotetrix serrifemoralis* Zheng et Jiang, 1998 and the male *Tetrix ruyuanensis* Liang 2002 were not reported in the original description and are described below for the first time.

Macromotetrix serrifemoralis Zheng et Jiang, 2002 (Fig. 1)

Female: Body small and dark brown. Pronotum between humeral angles with two slanting white spots. Wings black. Outside of hind femur brown, lower side black. Hind tibiae dark brown, with two light transverse spots. Body length, 9 mm; pronotum length, 6.8 mm; hind femur length, 6 mm.

Head slightly projecting above pronotum. Width of vertex slightly narrower than the width of an eye; lateral margins slightly turn out forward; anterior margin round; median carina obvious; in profile, frontal costa protruding between the antennae distinctly; the width of longitudinal sulcus slightly narrower than the width of coxa of antennae. Antennae filiform, lying between lower ridge of eyes. Eyes globose, projecting. Lateral ocelli placed on the middle part of anterior margins of eyes. Disc of pronotum with numerous tubercles, anterior margin straight; median carina distinct, in profile, upper margin of pronotum before and behind transverse sulci swelling upwards, the part behind the second swelling nearly straight; lateral carinae short, reduce postward on the prozona; humeral angle obtuse angle shaped, the part between them with two short longitudinal carinae; hind process of pronotum long cone-shaped, apex not reaching the tee of hind femur, apex sharp. Posterior angles of the lateral lobes of pronotum truncate; posterior margin of lateral lobes with two concaves. Elytra wide ovate, apex rounded. Wings developed, reaching the apex of hind process of pronotum. Lower margins of fore and middle femur straight; width of midfemur narrower than width of see parts of elytra. Length of hind femur about 3.2 times longer than the width, median keel of upper side with distinct fine teeth, preknee teeth before the knee acute angulate, knee teeth angulate. Outer side of hind tibia with 6 thorns, inner side with 5 thorns. Length of first segment of hind tarsus longer than the third. Ovipositor narrow and long, upper and lower ovipositors with slender teeth. Length of subgenital plate longer than wide, with a small triangle bulge in the middle of posterior margin.

Specimens Examined: 1♀, 27 May 2002, Guangxi: Tianlin (Jiudongping), 1200m, collected by Jiang Guo-Fang.



Fig. 1 *Macromotettix serrifemorialis* Zheng et Jiang, female whole body, lateral view. Body is 9 mm long.

Tetrix ruyuanensis Liang, 1998 (Fig. 2)

Male: Body small, dark brown, with tubercles. Body length, 7 mm; pronotum length, 7.5 mm; hind femur length, 5.5 mm.

Head not projecting above pronotum. Anterior margin of vertex arched, slightly protruding beyond eyes, its width about 1.6 times wider than the width of an eye; median carina obvious, two sides on the median carina slightly concave, lateral ridge slightly raising on the apex. Front slanting, in profile, vertex forming acute angles with frontal costa. Parts before lateral ocelli not concave, protruding archedly between antennae; longitudinal furrow deep, lateral ridge gradually expands from the part above lateral ocelli to the median ocellus, width of longitudinal furrow between antennae as wide as of the coxa of antennae. Lateral ocelli placed on the middle of anterior margins of eyes. Antennae filiform, lying between lower ridge of eyes, with 14 articles, length of an article about 5 times larger than the width of middle ones of antennae. Eyes globose. Anterior margin of pronotum slightly straight; disc of pronotum between transverse sulcus swelling by small hillock, upper margin of pronotum straight behind shoulders, hind process of pronotum cone-shaped, reaching the knee of hind femur; median carina swelling taking slightly thin in shape, lateral carinae parallel on the prozona, prozona similar to square shape, part between humeral angles without short longitudinal keel; humeral angle close to arc shape. Posterior margin of lateral lobes of pronotum with two concaves; posterior angles downward, apex of angles round. Elytra long ovate, Wings developed, reaching the apex of pronotum. Upper margins of fore femur and midfemur slightly bending, and lower margins slightly undulate; width of midfemur slightly wider than the width of visible part. Hind femur short and stranger, its length about 2.8 times larger than the width, median keels of upper and lower sides with slender teeth. Outer side of hind tibia with 9 spines, inner sides with 8 spines, tip wider than base slightly. Length of first article of hind tarsus longer than the third distinctly; the first and second pulvilli below the first tarsus small, triangle, tip sharp; the third large, similar to rectangle, tip blunt.

Specimens Examined: 1♂, 1 June 2002, Guangxi: Tianlin (Dadong Hill), 1400m, collected by Jiang Guo-Fang.

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Fig. 2 *Tetrrix ruyuanensis* Liang, male whole body, lateral view. Body is 7 mm long.

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